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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:

Fuyuki Ishikawa and

Art Unit:

To Be Assigned

Mamoru Hasegawa

Serial No.:

To Be Assigned

Examiner:

To Be Assigned

Filed:

February 17, 2004

Customer No.:

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Title:

ARTIFICIAL CHROMOSOME

Mail Stop Patent Application Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Applicants submit the references listed on the enclosed Form PTO-1449, copies of which are enclosed.

Submission of this statement is not a representation that a search has been made, nor is the inclusion of information in this statement an admission that the information is material to patentability.

This statement is being filed with the application.

Under 35 U.S.C. § 120, this application relies on the earlier filing date of application serial number 09/254,947, which was filed on March 13, 2000. The following

references were submitted to and/or cited by the Office in the prior application and,

therefore, copies of these references are not provided for this application:

WO 98/08964

Autexier et al., "Functional Reconstitution Of Wild-Type And Mutant *Tetrahymena* Telomerase," *Genes & Development* 8:563-575 (1994).

Autexier et al., "Reconstitution Of Human Telomerase Activity And Identification Of A Minimal Functional Region Of the Human Telomerase RNA," *The EMBO Journal* 15(21):5928-5935 (1996).

Brem et al., "YAC Transgenesis In Farm Animals: Rescue Of Albinism In Rabbits," *Molecular Reproduction And Development* 44:56-62 (1996).

Davies et al., "YAC Transfer Into Mammalian Cells By Cell Fusion," *Methods in Molecular Biology* 54:281-292 (1996).

Gobin et al., "Transfer Of Yeast Artificial Chromosomes Into Mammalian Cells And Comparative Study Of Their Integrity," *Gene* 163:27-33 (1995).

Gnirke et al., "Microinjection Of Intact 200- to 500-kb Fragments Of YAC DNA Into Mammalian Cells," *Genomics* 15:659-667 (1993).

Grady et al., "Highly Conserved Repetitive DNA Sequences Are Present At Human Centromeres," *Proc. Natl. Acad. Sci. USA* 89:1695-1699 (1992).

Harrington et al., "Formation of De Novo Centromers and Construction Of First-Generation Human Artificial Microchromosomes," *Nature Genetics*, 15:345-354 (1997).

Hayatsu et al., "A Modified S. Cerevisiae Telomerase That Synthesizes The Human Telomeric Repeats In Vivo," *Cell Structure and Function* (Abstract IP-03), 21:582 (1996).

Henning K. et al., "Humanizing The Yeast Telomerase Template," *Proc. Natl. Acad. Sci. U.S.A.*, 95:5667-5671 (1998).

Hodgson et al., "Human Huntingtin Derived From YAC Transgenes Compensates For Loss Of Murine Huntingtin By Rescue Of The Embryonic Lethal Phenotype," *Human Molecular Genetics* 5(12):1875-1885 (1996).

Huxley, "Mammalian Artificial Chromosomes: A New Tool For Gene Therapy," *Gene Therapy* 1:7-12 (1994).

Huxley, "Mammalian Artificial Chromosomes and Chromosomes Transgenics," *Trends Genet.* 13:345-347 (1997).

Huxley et al., "The Human HPRT Gene On A Yeast Artificial Chromosome Is Functional When Transferred To Mouse Cells By Cell Fusion," *Genomics* 9:742-750 (1991).

Ikeno et al., "Distribution of CENP-B Boxes Reflected In CREST Centromere Antigenic Sites On Long-Range Alpha-Satellite DNA Arrays Of Human Chromosome 21," *Hum. Mol. Genet.* 3:1245-1257 (1994).

McEachern et al., "Runaway Telomere Elongation Caused By Telomerase RNA Mutations," *Nature* 376:403-409 (1995).

McEachern et al, "Runaway Telomere Elongation Caused By Telomerase RNA Gene Mutations," *GenBank Accession Number U31465*; August 31, 1995.

Moyzis, "A Highly Conserved Repetitive DNA Sequence, (TTAGGG)n, Present At The Telomeres Of Human Chromosomes," *Proc. Natl. Acad. Sci.* 85 (1988).

Peterson et al., "Use Of Yeast Artificial Chromosomes (YACs) For Studying Control Of Gene Expression: Correct Regulation Of The Genes Of A Human β-globin Locus YAC Following Transfer To Mouse Erythroleukemia Cell Lines," *Proc. Natl. Acad. Sci. USA* 90:11207-11211 (1993).

Riley et al., "Targeted Integration Of Neomycin Into Yeast Artifical Chromosomes (YACs) For Transfection Into Mammalian Cells," *Nucleic Acids Research* 20(12):2971-2976 (1992).

Schedl et al., "A Method For the Generation Of YAC Transgenic Mice By Pronuclear Microinjection," *Nucleic Acids Research* 21(20):4783-4787 (1993).

Singer et al., "TLC1: Template RNA Component Of Saccharomyces Cerevisiae Telomerase," *Science*, 266:404-409 (1994).

Sun et al., "Engineering A Mini-herpesvirus As A General Strategy To Transduce Up To 180 kb Of Functional Self-replicating Human Mini-chromosomes," *Gene Therapy* 3:1081-1088 (1996).

Taylor et al., "Addition Of Functional Human Telomeres To YACs," *Human Molecular Genetics* 3(8):1383-1386 (1994).

Vocero-Akbani et al., "Mapping Human Telomere Regions With YAC and P1 Clones: Chromosome-Specific Markers For 27 Telomeres Including 149 STSs and 24 Polymorphisms For 14 Proterminal Regions," *Genomics* 36:492-506 (1996).

Yu et al., "In Vivo Alteration Of Telomer Sequences and Senescence Caused By Mutated Tetrahymena Telomerase RNAs," *Nature*, 344:126-132 (1990).

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Respectfully submitted,

Date: 17 February 2004

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FOREIGN PATENT OR PUBLISHED FOREIGN PATENT APPLICATION									
Examiner's Initials	Document Number	Publication Date	Country or Patent Office			Subclass	Translation (Yes/No)		
	WO 98/08964	03/05/1998	WIPO						
OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PLACE OF PUBLICATION)									
	Autexier et al., "Functional Reconstitution Of Wild-Type And Mutant Tetrahymena Telomerase," Genes & Development 8:563-575 (1994).								
	Autexier et al., "Reconstitution Of Human Telomerase Activity And Identification Of A Minimal Functional Region Of the Human Telomerase RNA," <i>The EMBO Journal</i> 15(21):5928-5935 (1996).								
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Schedl et al., "A M Research 21(20):4							
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